

REMARKS

Claims 1, 3, 5, 13-24, 28 and 29 are all of the pending claims, with 1, 13, and 24 being written in independent form. By virtue of this amendment, Applicant amends claims 1, 3, 5, 13, 14, 24 and 28, and cancels claims 2, 4, 6-12, 25-27.

I. Claim Rejections on Prior Art Grounds:

The Examiner rejects claims 13-19 and 24-28 under 35 USC §102(e) as being anticipated by US 6,750,622 to Simizu et al. ("Simizu"); claims 1-8, 10, 11, 13-21 and 24-28 under 35 USC §102(b) as being anticipated by US 5,731,673 to Gilmore ("Gilmore"); and claims 9, 12, 22 and 23 under 35 USC §103(a) as being obvious over Gilmore and US 6,353,705 to Capps et al. ("Capps"). Applicant respectfully traverses all of these rejections in view of the following remarks.

A. Independent Claim 1:

Applicant submits that Gilmore does not teach or suggest a method for extending the life of a power supply that supplies power to a motor in a power tool, comprising, at least, *comparing a motor current generated due to the supplied voltage pulses to at least one of three different thresholds* and changing the pulse width from the initial width to one of zero, a first alternative pulse width and a second alternative pulse width based on the comparison to the given threshold, as recited in claim 1.

Gilmore merely describes a microcomputer 26 which is responsive to a threshold current level pot 14 to adjust the point at which the ratcheting mode (which is the mode in which PWM is used) begins (col. 6, lines 47-52). This is not relevant to adjusting pulse width using PWM based on a comparison of motor current to one of at least three thresholds.

For at least that reason, Applicant kindly requests that the rejection be withdrawn as to claim 1, and claims 3 and 5 dependent thereon.

B. Independent Claim 13:

Applicant submits that Simizu does not teach or suggest a power tool comprising, at least, *a power supply disposed within the housing and including a plurality of lithium ion batteries*, as recited in claim 13. Simizu merely describes using power supplies that include rechargeable lead acid batteries (col. 1, lines 25-27), motor/battery powered systems in the range of several hundred watts (col. 2, lines 63-65), and fuel cells or hydroelectric generators (col. 7, lines 40-41).

Furthermore, for reasons analogous to those noted above with respect to claim 1, Applicant also believes claim 13 is distinguishable from Simizu and Gilmore because neither reference teaches or suggests a power tool comprising, at least, a pulse width modulation controller within the housing for varying the pulse width of voltage pulses supplied to the motor *based on a comparison of the motor current to one of at least three different thresholds*.

Simizu merely describes a microprocessor 12 which compares a voltage signal to its corresponding control parameter in order to implement a control strategy (col. 5, lines 38-58). The control strategy is selected to achieve one of a constant battery voltage (col. 6, lines 34-35), a constant motor speed (col. 6, lines 45-47) or a constant motor torque (col. 6, lines 66-67). In the constant motor speed control strategy option, for example, the microprocessor 12 compares the desired speed to the actual speed, and then in turn adjusts the duty cycle of the PWM signal up or down (col. 6, lines 56-59). Simizu therefore compares against only one threshold level (the voltage level directly compared to a single corresponding control parameter) and increases or decreases the duty cycle

accordingly. This is not equivalent to adjusting the voltage pulse width according to a comparison of motor current to one of at least three thresholds; a non-limiting example embodiment disclosed in the specification being whether the current goes above a maximum tolerable threshold, above an upper threshold, or below a lower threshold (paragraphs [0051-0056]).

For at least these reasons, Applicant kindly requests that the rejection be withdrawn as to claim 13, and claims 14-23 dependent thereon.

C. Independent Claim 24:

For reasons somewhat similar to those noted above with respect to claim 13, Applicant submits that Simizu and Gilmore do not teach or suggest an apparatus for limiting current to a load comprising, at least, means for controlling the means for switchably supplying power *based on a comparison of current generated in the apparatus to one of at least three different thresholds*

For these reasons, claim 24 is believed to be patentable over the prior art apparatuses in Simizu and Gilmore and Applicant kindly requests that the rejection be withdrawn as to claim 24, and claims 28-29 dependent thereon.

CONCLUSION

In view of the above, Applicant earnestly solicits reconsideration of the objections and rejections and allowance of each of the pending claims 1, 3, 5, 13-24, 28 and 29 in connection with the present application.

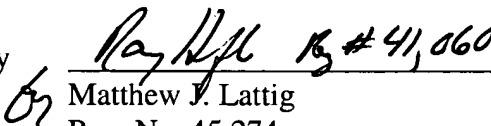
Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) hereby petition(s) for a one (1) month extension of time for filing a reply to the Office Action and submit the required \$120.00 extension fee herewith.

Should there be any matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Matthew J. Lattig at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKY, & PIERCE, P.L.C.

By  Matthew J. Lattig
Reg. No. 45,274
P.O. Box 8910
Reston, Virginia 20195
(703) 668-8000

MJL/BMP/ah